

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Dong-Hi SIM et al.

Serial No: 10/724,514

Filed: November 26, 2003

For: SIGNAL PROCESSING METHOD IN
MIMO SYSTEM AND APPARATUS
THEREOF

Art Unit: 2611

Examiner: Ghulamali, Qutbuddin

Conf. Number: 1835

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This paper is in response to the Final Office Action dated November 17, 2009 in connection with the above-identified application. This response is due on February 17, 2010. Applicant requests review of the final rejection in the above-identified application.

Review of the application is requested for the reasons set forth below. No amendments are being filed with this request.

A Notice of Appeal is concurrently submitted herewith.

REMARKS

Claims 38-45 are all the claims pending in the application, claims 1-37 having been previously canceled. Claims 38 and 42 are independent claims. Claims 38-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent Application Publication No. 2002/0004924) in view of Matsumoto (U.S. Patent Application Publication No. 2004/0190551) and further in view of Bantz (U.S. Patent No. 5,507,035). Applicant submits that there are a number of clear errors in the Examiner's rejections. These issues, along with other matters, will be discussed in more detail below.

1. Matsumoto does not teach utilizing an antenna.

Claims 38-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent Application Publication No. 2002/0004924) in view of Matsumoto (U.S. Patent Application Publication No. 2004/0190551) and further in view of Bantz (U.S. Patent No. 5,507,035).

The Examiner admits that Kim fails to teach all of the limitations of claims 38 and 42, respectively, but asserts that the combination of Matsumoto and Bantz cure the deficiencies of Kim. Final Office Action of Nov. 17, 2009, page 3. Applicant respectfully submits that the Examiner's application of Matsumoto and Bantz is in error.

The Examiner asserted that Matsumoto discloses "only the dummy bits are assigned for transmission to antenna that is not used for transmission of data" citing page 5, sections 0046, 0047 and 0048 of Matsumoto. *Id.* at page 3, lines 9-11.

Matsumoto discloses a communication system and method for performing data communication of discrete multi-tone modem type between a plurality of communication units through a telephone line. See page 1, paragraph 0001 of Matsumoto. However, it was previously asserted that no antenna is used in a communication system using a telephone line, i.e. a wired line, such as in an ADSL, HDSL, or SDSL communication system. Therefore, the Applicant asserted that there is no possibility in Matsumoto that the dummy bits are assigned for transmission to an antenna that is not used for transmitting data. Response of Dec. 31, 2009, page 5. Hence, the feature of allocating dummy bits to an antenna having bad channel status, as recited in claims 38 and 42 is not taught by the combination of Kim, Matsumoto and Bantz.

2. Assigning dummy bits to a portion of a data transmission time is not analogous to allocating dummy bits to an antenna having bad channel status.

In the Examiner's latest comments, the Examiner disagreed with the Applicant's assertion that there is no possibility in Matsumoto that the dummy bits are assigned for transmission to an antenna that is not used for transmitting data. Advisory Action of Jan. 29, 2010. Specifically, the Examiner asserted that Matsumoto discloses that "ADSL can be operated in a wireless mode and that a gateway is commonly provided and used to make an ADSL connection to a wireless access point, it is also commonly known in the art of communication that in order to transmit and receive wireless signal into a wired device such as ADSL, an antenna or antennas is generally utilized." *Id.* Accordingly, the Examiner asserted that it would have been obvious to a person of ordinary skill in the art to use an antenna with the communication system disclosed in Matsumoto. *Id.*

Applicant previously noted that paragraphs 0046 to 0048 of Matsumoto disclose that "dummy bits are assigned to the portion of the data transmission time to which the data to be transmitted has not assigned" (emphasis added). Accordingly, Applicant asserted that this disclosure is not analogous to an "antenna that is not used for transmission of data" as stated by the Examiner. Response of Dec. 31, 2009, page 5.

Sections 0046 to 0048 of Matsumoto merely disclose that dummy bits are assigned to a transmission time interval to which the data to be transmitted is not allocated in a time division multiplexing (TDM) mode. *Id.* at page 6. For the sake of argument, even if the Examiner is correct in asserting that an antenna can be used with the communication system disclosed in Matsumoto, the Examiner provides no evidence of how assigning dummy bits to a transmission time interval, as taught in Matsumoto, is the same as allocating dummy bits to an antenna, as recited in claims 38 and 42. Accordingly, Applicant asserts that one having ordinary skill in the art at the time the invention was made would not be motivated to combine the teachings of Matsumoto with Kim and Bantz to allocate dummy bits for transmission to an antenna that is not used for transmission of data because assigning dummy bits to a portion of a data transmission time, as taught in Matsumoto, is not analogous to allocating dummy bits to an antenna.

3. Bantz does not cure the deficiencies of Kim and Matsumoto.

The Examiner admits that Kim and Matsumoto combined does not explicitly disclose using data blocks using an antenna having good channel status and dummy bits using an antenna having bad channel status, but asserts that Bantz cures the deficiencies of Kim and Matsumoto. Final Office Action of Nov. 17, 2009, pages 3-4. Applicant respectfully submits that the Examiner's application of Bantz is in error.

The Examiner asserted that Bantz “discloses use of multiple antennas wherein a preferred antenna (good antenna) selection strategy can be used based on the received channel data quality measured at each antenna/receiver branch and information used in the selection of the good or preferred antenna,” citing column 2, lines 29-45 and column 3, lines 10-22 of Bantz. *Id.* at page 3.

Column 2, lines 29-45 and column 3, lines 10-22 of Bantz relate to “selection antenna diversity” and “switching antenna diversity.” However, Bantz fails to disclose “allocating each of the at least two second data blocks and dummy bits to the plurality of antennas based on the received channel status information, wherein each of the at least two second data blocks is allocated to an antenna having good channel status and only the dummy bits are allocated to an antenna having bad channel status” as recited in claims 38 and 42. Bantz merely discloses in column 3, lines 10-22 that, by “selection antenna diversity,” a station with multiple antennas receives multiple copies of every packet and can choose a good copy from the bad copies and, by “switching antenna diversity,” a station receives only one copy of every packet from its selected antenna. Accordingly, Applicant submits that this disclosure of Bantz does not teach or suggest the Applicant’s claimed limitation. Thus, Bantz fails to cure the deficiencies of Kim and Matsumoto.

6. Conclusion.

In view of the foregoing, the combination of Kim, Matsumoto and Bantz fail to teach or suggest features recited in independent claims 38 and 42. Therefore, these claims are believed to be patentable. In addition, dependent claims 39-41 and 43-45 are patentable at least by virtue of their respective dependencies on the patentable independent claims.

In light of the above remarks, Applicant submits that the present application is in condition for allowance and requests a Notice of Allowance. The undersigned attorney is available at (213) 623-2221 to discuss any matter concerning this application.

Respectfully submitted,
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